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Strip Mining a No. 6 Coal Seam in Western Kentucky

Operations of the Dawson Daylight Coal Company Near Dawson Springs. The Property of This Company Includes Four Seams, All of Which Can Be Mined in Part by Stripping

IN the holdings of The Dawson Daylight Coal Company there is encountered a geological feature that is not found in any other place throughout the entire Western Kentucky coal field. Because of some peculiar geological disturbance, the No. 6 coal seam has been lifted vertically 275 feet above its original position and placed in the foothills, forming the lowest step of the terrace made by the four seams of coal found on this property. This terrace of four seams of coal, namely, Nos. 6, 9, 11 and 12 by the correlation of the western Kentucky coals, will be mined by strip, drift, slope and shaft. Although thirty-four per cent of the available tonnage can be operated by the strip method, some will be mined by underground methods through drift and slope entrances. A still larger tonnage will require shafting.

A Property of 1,343 Acres

The Dawson Daylight Coal Company had its beginning before the War, although actual stripping was not started until well into the summer of 1924. The company is composed of a group of Louisville, Kentucky, business men, and includes several coal men, a number of bankers and two engineers. Assuming that the strip method of coal extraction or a combination of the strip and drift mining methods is unusually economical, if proper physical and labor conditions can be found, this group kept a drilling crew busy for over a year making cores of a large number of actual and alleged stripping properties throughout the western part of the state. W. J. Borries, the present general manager of the mine, was in charge of the field work during this period, and the general plan was under the personal direction of Kenneth U. Meguire. The choice finally settled upon the Dawson property, which includes 1,343 acres, the company acquiring fee-simple title to the property.

A great deal of very poor coal is contained in the Central Coal Basin, which includes the western field of Kentucky, Indiana and Illinois. The upper measures in this field have a high ash and sulphur content, together with a considerable moisture. At the greater depths, however, the coal runs lower in moisture, ash and sulphur, and has much higher heat value. In prospecting, this company drilled much territory where Nos. 9, 11 and 12 coal seams were found, and at Beaver Dam they found some strip coal which from its analysis belonged to one of the lowest of the coal measures. This seam gave an analysis similar to that of the Bell Seam of Western Kentucky; it was hard and brilliant and ran under 3 per cent ash and 1 per cent sulphur. Further investigation, however,

1-yard Bucyrus shovel loading material used to grade new railroad spur. Shovel is also uncovering part of No. 6 coal seam.

showed that erosion had cut out a large area, which apparently did not leave sufficient tonnage to make the mining advisable.

A Lower Measure Encountered Close to the Surface

Options were taken on the Dawson property, with the understanding that twenty-six churn-drill holes made under the direction of a former superintendent of the St. Bernard Mining Company would prove accurate within 5 per cent as determined by the Diamond core drill. On this property there were also a great many outcrop openings, test pits, holes made with post-hole dig-

gers, and all kinds of prospect openings on the four seams of coal mentioned above, namely, Nos. 6, 9, 11 and 12. Here the prospectors found conditions which were almost ideal; an uplift had brought one of the desirable lower coal measures close to the surface, and on a part of the property there was a large acreage of the three upper seams suitable for mining by both the strip and drift methods. The lowest seam of the terrace of four was the No. 6 seam, and its analysis showed ash content less than 3 per cent, a heat value of about 14,000 b. t. u., dry basis, and a sulphur content in the neighborhood of 2 per cent; the drilling log showed an average of 54½ inches thick, and an overburden bearing from 30 to 45 feet. This No. 6 seam was therefore chosen as the seam upon which to begin work, the other three seams being left for future mining.

Property Taken Over in 1923

The property was taken over in 1923 and drilling and prospecting continued until a complete structural and topographic map of the entire

No. 6 Coal Seam Uncovered by 1-Yard Revolving Shovel, Prior to Installation of the 6-Yard Stripper

acreage had been completed, including quite a large number of additional areas of land added to the original tract of 1,100 acres.

Plans were made for 2½ miles of railroad line to and through the property, for water supply, drainage, camp location, tipple and shop. Outside engineers were called in, and these plans and the program for continuous stripping and the future plans for drift, shaft and slope mining were gone over with great care.

The total recoverable tonnage, carefully estimated from the data obtained, is close to 10,500,000 tons. The company is at present stripping the No. 6 coal, and when they have stripped as much as is economically advisable they will move further up the hill and strip the next seam in the terrace, and at that time consider the question of extracting more of the No. 6 seam by the drift or slope methods. It is expected that a total of 85 per cent of the actual tonnage can be mined by these three methods. The following tabulation of the coal analysis may prove interesting:

Analyses of Four Coal Seams at Dawson Springs

Name of Seam	Thickness Ft. In.	Proximate Analysis (As Received) Moisture	Ash	Volatile Matter	Fixed Carbon	Sulphur	British Thermal Units	Fusion Temp. of Ash
No. 6	4 5½	5.22	2.84	36.76	55.18	1.44	13,339	2,58
No. 9	5 0	6.85	7.94	36.37	48.54	3.32	12,232	2,42
No. 11	7 0	6.20	5.91	37.36	50.53	3.03	12,612	2,47
No. 12	4 6	6.37	12.19	36.79	44.65	2.79	11,698	2,44

Work Started in the Fall of 1923

During the latter part of 1923 the company purchased a Bucyrus 35-B small revolving shovel mounted on caterpillars and equipped with a 1-yard bucket. This machine was moved into the property at once, and placed on the work of preparing the site for the tipple and grading the line for construction of the spur track from the tipple to the main line of the Illinois Central Railroad, which at that time had just been completed between Dawson Springs and Central City. In this grading much borrowed material was needed, and the shovel, therefore, nosed in above the No. 6 coal seam, and thus was uncovering the No. 6 coal along the outcrop, and at the same time was supplying material for the grading.

At this time the shovel also excavated the site for the erection of the big stripping machine which was to be erected and put to work as soon as the railroad spur was built. By this means it was possible to erect the big shovel within 100 feet of the point where it would start work on removing the overburden.

The overburden moved by the 1-yard shovel consisted of clay and light shale. The shovel was served by a train of six 4-yard cars, each hauled by a steam dinkey to temporary fill trestles. The length of haul from the shovel to the end of the grade was about 2,000 feet, and the approach grade to the trestle was about 2½ per cent.

Incidentally, some real fast work was accomplished on this part of the job, and in one particular nine-hour shift 748 yards of excavated material was moved. The shovel was mounted on caterpillars, and also equipped with a 30-foot boom and 20-foot dipper sticks, and was operated by Chas. Tindall of Dawson Springs and fired by Thurmus Musgrove. Kelly Butley ran the dinkey, and the grading was in charge of Kimmel Cairel, foreman.

Stripping 45 Feet of Cover with a 6-Yard Shovel

The stripping shovel purchased for this work was a Bucyrus 320-B equipped with an 85-foot boom, 58-foot dipper sticks and a 6-yard dipper. The overburden encountered above the No. 6 seam averages about 30 feet deep, and is composed of about 10 feet of clay underlaid by about 20 feet

of blue shale. The maximum which will be stripped on this seam will be about 45 feet, of which approximately 20 feet is clay and the lower 25 feet shale. The cuts are 50 feet wide. This overburden requires shooting only when the thickness of the shale extends 20 feet. The actual stripping was begun in July 1924, and to date over two million cubic yards have been moved. The stripper is operated on two 10-hour shifts per day, and averages about 4,500 cubic yards per day. The strip pit is in most cases self-draining, and pumps are only required in an occasional box cut.

No. 6 Seam 62 Inches in Thickness

The No. 6 seam averages about 52 inches in depth and runs as high as 62 inches, although never being any thinner than 50 inches. There are no partings in the coal and it sits on a good hard bottom. The stripping is ideal and the banks stand very well, and the spoil banks do not tend to slide. The cuts of the stripping shovel, which, of course, were carefully planned from the prospecting by core drills, are 50 feet wide.

Following the stripping shovel and loading the coal is the Bucyrus 35-B, which was used for grading while the property was being opened. It has now been equipped with a 1¾-yard coal-loading dipper. This shovel is served by trains of 6½-ton-capacity Sandford-Day automatic drop-bottom cars hauled by steam locomotives. The trains are made up of from 8 to 9 cars, so that an average of 48 tons is hauled to the tipple hopper.

A trip rider on the locomotive releases the door-opening latches of these cars, discharging the coal into a 60-ton hopper. At the far end of the hopper the doors of these cars are automatically closed and latched. This arrangement makes it possible to unload the 50 tons of coal carried on one trip in less than one minute. Usually only one train is in operation, although occasionally two are used. The average daily output at the present time is from 750 to 1200 tons. There is an 18-ton American and 16-ton Davenport locomotive on the job. The loading shovel is operated one shift per day.

The 320-B is operated by T. W. Thompson, engineer, on one shift, and G. T. Gaut, engineer on the other shift. There are four men in the pit. On the 35-B Chas. Tindall pulls the levers; two men are kept in the pit.

A 3500-Ton, 4-Track Tipple

The company has built a 3500-ton, four-track tipple, equipped with a full complement of screens and loading booms. The cars from the pit discharge into a bin having two hoppers, both of which feed through reciprocating feeders to a steel pan conveyor four feet wide. This is inclined and elevates the coal to the top of the tipple and on to the shaker screen.

This tipple is a massive wood structure built on concrete and wood pile foundations. It is equipped with shaker screens 6 feet wide, and distributes prepared coal to four railroad loading tracks. There is a separate mine-run hopper, from which coal can be loaded directly into railroad cars.

The standard coal preparations made are as follows: 6-inch lump, 6 x 3-inch egg, 3 x 1¼-inch nut and 1¼-inch nut and slack. Various combination sizes are also possible.

The six-yard shovel in the background works two 10-hour shifts per day and averages about 4500 cubic yards per day. The 1¾-yard machine is loading out from 750 to 1200 tons per day, working one 10-hour shift.

The lump and the egg size after passing over 12-foot horizontal sections, used as picking tables, are loaded into the railroad cars by apron loading booms, eliminating breakage, and the nut is conveyed into the bottom of the cars by chutes which are gradually raised as the car is loaded. By means of degradation screens under the main shaker screen, the undersized coal is taken out of the prepared sizes, and conveyed to the car which is being filled with that size. The prepared coals are therefore re-screened before they are loaded.

All the machinery in the tipple is driven by electric motors. The railroad cars are placed under the tipple by a gravity track system. The loaded storage track has a 60-car capacity. The

company owns 1¾ miles of the spur track. This connects with the new main line of the Illinois Central Railroad near the village of Charleston. The right-of-way for this spur railroad is fenced in, and the roadbed thoroughly drained by ditches and protected by concrete culverts.

Water Supply from Artificial Lake

To guarantee a supply of feed water for the power plant the company constructed a 10-acre lake. This water comes from springs and rainfall. The lake is located in that portion of the property where the water does not become contaminated with mine drainage or other injurious inflows. The water from this reservoir is discharged by an electrically-driven pump to a large storage tank located on the hill above the strip area, whence it flows by gravity to the steam shovels.

The company has built a quite extensive and well-planned mining town which is laid out with much artistic judgment. The road in the town site forms an oval running around a ridge. Along it 4 and 5-room bungalows have been constructed. Some of the houses of the town site are so situated that they have a full view of the lake. They are electrically lighted, and have running water connections, sewage and garbage disposal, and the employees abide by the strict rules of community sanitation. The same power pump which supplies water to the steam shovel sends water through a chlorinating pressure filter to a storage tank on a hill above the town site, from whence sterilized and filtered water is supplied for drinking and general use. The spoil banks of the pit have been planted to clover, as part of the sheep-raising project which is to make use of the 1343-acre holding.

The company's mine office and store are under one roof, and are located in the town site. This is a large building, well-lighted, with spacious rooms for the general office, for the manager and for the engineer, two rooms for the store and one sleeping room. Below the main floor is a large storage basement and heating plant.

C. C. Cooke is superintendent of the plant, Logan Riggs, tipple foreman, W. J. Borries is general manager, and T. H. Bowling, office manager.

Above — The Office Building of the Dawson Daylight Coal Company.

Center — Main Street. Town site of the Dawson Daylight Coal Company. The homes have four and five rooms.

Right — Daylight Lake. Many of the bungalows of the town site overlook this piece of water.

The Dawson Daylight Coal Company's property includes, in addition to a complete strip-mining plant, a modern town for its employees. The town, composed of 4 and 5-room bungalows, is electrically lighted, has a chlorinated and filtered water supply, sewage and garbage disposal.

Vermont Highway Board Installs Testing Laboratory

The State Highway Board of Vermont has recently established its own testing laboratory. They report that this insures greater satisfaction in their testing work than was previously obtained from outside agencies. Though Vermont is not at present conducting any research, they are keenly alive to the progress being made, and expect in time to develop a research program.

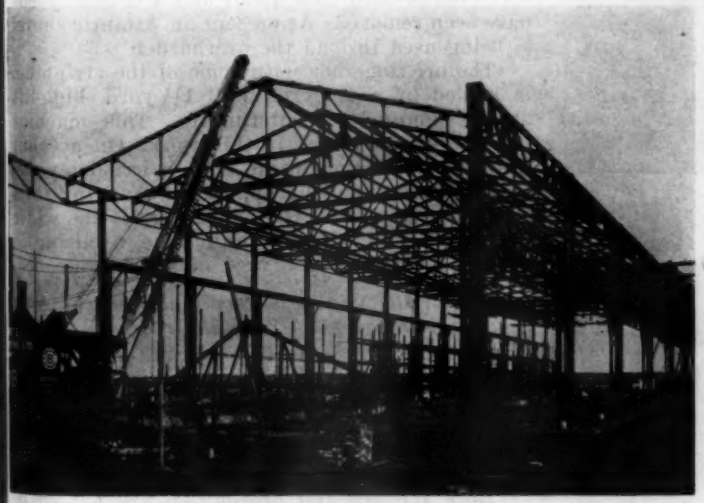
A ¾-yard Shovel Digging for the Foundation of an Automobile Factory in Australia

Shallow Shovel Excavation Costs in Australia

Some Figures on the Operation of a ¾-Yard Steam Shovel at Work on the Excavation for an Automobile Plant

LATE last year at North Geelong, New South Wales, Australia, the Ford Motor Company of Australia began the erection of a new factory. Upon this work, which involved very shallow digging, the Concrete Constructions, Ltd., of Sydney, used a small revolving steam shovel, mounted on caterpillars and equipped with a ¾-yard dipper, a 20½-foot boom and 12-foot dipper handles. This machine was used both for the loading of small "drays" or tip-carts, during the excavation of the site, and, fitted with a special long boom, as a crane for the placing of the steel work in the actual erection of the building.

While working as a shovel, the machine was making a cut with an average depth of 2 feet 1½ inches. The first six inches of this was soft loam, the next eight inches soft clay, and the balance to a depth of three feet was hard clay. The machine was served by twenty-two horse-drawn tip-carts, and the material had to be hauled an average distance of about eighteen hundred feet.



The Small Revolving Shovel, Working as a Crane, Placing Steel for Concrete Constructions, Limited

The details of the cost of the shovel operation are given below. It may be interesting to compare these with the cost of moving the dirt by hand methods — ploughing the ground and moving it by scoops drawn by Fordson tractors. The cost by this hand method, when the haul was only 1160 feet, was approximately 89 cents or 3 shillings 8.4 pence (3/8.4) per cubic yard.

The cost with the shovel was only about thirty-five cents (1/5.7) per cubic yard, with an average haul of eighteen hundred feet. The details are as follows:

Wages:

Shovel Operator.....60c (2/6) per hour
Shovel Fireman.....53½c (2/2¾) per hour
Assistant on Bank.....53½c (2/2¾) per hour
Drays .....72c (3/—) per hour

Shovel fireman's wages brought up to average of (2/5¼) per hour, with necessary overtime in lighting up and cleaning boiler and tubes, etc.

Greatest number of dray loads per day of 8 hours...735
Least number of dray loads per day of 8 hours.....593
Average number of dray loads per day of 8 hours....667
(Average taken over three weeks' work.)

Greatest cost of excavation—
haul 758 yards.....45c (1/10.4) per cubic yard

Least cost of excavation—
haul 387 yards.....31c (1/2.3) per cubic yard

Average cost of excavation over three weeks' work, with average haul of 610 yards..35c (1/5.7) per cubic yard

During this work, delays encountered were analyzed as follows:

Delays Experienced:

Water Line Troubles.....40%
Jibbing Horses.....38%
Moving to New Cut.....18%
Mechanical Troubles.....4%

Mr. Bernaise was in charge of the job for the Concrete Constructions, Limited.

Brown Ore Mines of the Central Iron & Coal Company

A Description of the Stripping and Loading by Steam Shovel of a Brown Iron Ore Lying Under 30 to 50 Feet of Cover at Giles, Alabama

IN order to furnish ore for its blast furnace at Holt, Alabama, the Central Iron & Coal Company is operating an interesting brown ore strip mine near Giles, Alabama. On account of the occurrence of the ore body under deep overburden and with bad drainage conditions, the recovery of this ore presents many unusual and difficult conditions.

The ore body is irregular in outline, varying from 25 feet to 50 feet in depth, and is covered with 30 feet to 50 feet of material. Near the ore the overburden is either a black clay or sand, while near the surface of the ground it is red clay. The ore is a limonite and carbonate of iron, and when washed will average about 50 per cent of iron with small amounts of phosphorus and manganese. Considerable clay is mixed with the ore, so that it is necessary to wash the ore thoroughly. Another condition unfavorable to the recovery of the ore is the presence of numerous springs, with occasional pockets of quicksand in the bottom of the pit.

Views During the Early Stripping Operations

Method of Operation

In order to get to the ore it is necessary to remove the overburden. This is loaded into 5-yard, 36-inch gauge Western side dump cars and hauled to a nearby waste bank. Before reaching ore it was necessary to remove about 75,000 yards, and up to the present time about half a million yards have been removed. At present an Atlantic shovel is being used to load the overburden.

The ore, together with some of the stripping, is loaded by a Bucyrus 50-B 1¼-yard, high-lift shovel mounted on caterpillars. This machine has many advantages in this work. On account of its caterpillar mounting there is less delay due to derailments, moving up, and in changing from one cut to another. Another feature is the wider and deeper cut, which it can handle, resulting in less track expense per yard of material loaded.

Output of the 1¼-Yard Revolving Shovel About the Same as a 2½-Yard Railroad Shovel

This 1¼-yard machine replaced a 2½-yard, truck-mounted railroad-type (Atlantic) shovel, and effected a saving of four men in the pit and three men on the track work, the three track men having been required as it was customary to build track behind the shovel.

Both the ore and overburden are hauled in 5-yard 36-inch cars. Four-driver, saddle-tank

A 1¼-yard, high-lift shovel loading brown ore into 5-yard cars. Note the wet condition of the pit.

A General View of the Central Iron & Coal Company's Brown Ore Strip Mine Near Giles, Alabama

Porter locomotives weighing 15 to 20 tons are used.

The average time required for this 1¼-yard machine to load a 5-yard car in stripping 15 feet of overburden is 1 minute 45 seconds or 21 seconds per cubic yard. This is practically the same loading speed as the Atlantic with a 2½-yard dipper.

On account of the depth of the pit and limited space available, it has been found advisable to operate with grades as steep as 8 per cent, although 5 to 6 per cent is about the average. With these grades and rather poor track in the pit the engines handle three or four cars to the train.

Atlantic Shovel Stripping Ore

Ore Washer

From the pit the crude ore is hauled to the washer, a distance of 4000 feet and some 130 feet above the pit level, so that all material flows by gravity through the washer. Here it is dumped over an inclined grizzly built of 4 x 5 T-bars held in place by clip angles in I-beams. The donicks and lumps above 5 inches are passed through a No. 7½ Gates gyratory crusher. The clay and fine material drops through to an incline underneath the grizzly. Water is delivered under pressure on this incline, and feeds the material into a cast iron flume of special design to obtain maximum capacity with minimum use of water. This flume distributes the material into two McLanahan-Stone revolving screens, 2½-inch mesh. The fines drop through into the logs, and from these into a double shell sand screen. Two 36-inch picking belts convey the larger lump and fines to the discharge into the standard gauge ore cars. Men hand pick the ore on both belts to remove rock and mud balls which come through. This refuse is carried off by the waste water flume from the logs. Drive is from a 75 H. P. slip ring motor using current at 220 volts furnished by the Alabama Power Company.

Water for the washer is provided by a 1400 gallons per minute centrifugal pump driven by a 100 H. P. motor.

Personnel

Mr. J. L. Brierton, vice-president and general manager of the Central Iron & Coal Company with office at Holt, Alabama, is in general charge of the mines, furnace and foundry. Mr. John Shackleford, superintendent, is in direct charge of the mines at Giles. Mr. R. C. Smith is chief engineer for the company.

On the Atlantic shovel, Kelly Dickey is operating, assisted by Lee Tibbs on the boom and Rick Hendricks at the boiler. Rufe Hardeman is handling the 50-B with Tom Sims as fireman.

Mr. W. A. Bond is master mechanic in charge of a complete repair shop.

According to a recent bulletin of the Bureau of Standards, Department of Commerce, Washington, D. C., good concrete can be made from crushed limestone or hollow tile waste. The only drawback to the use of this material is the angularity of the pieces, which makes the concrete flow less readily and makes it harder to handle by the methods used in large construction enterprises. The Bureau of Standards believes that this drawback can be remedied by oversanding. It is hoped that the large quantities of such waste material which accumulate around quarries producing dressed limestone, and at plants manufacturing hollow tile, may be put to use. Test cylinders showing the limestone concrete is slightly weaker than gravel concrete and the tile concrete about one-fourth stronger.

A panorama of Central Iron & Coal Company's washing plant. Ore enters this plant about 130 feet above the bottom of the pit, so that gravity is used to handle both water and ore.

Building an Inverted Siphon with a Dragline

On the Riverton Project of the United States Reclamation Service in Wyoming a fourteen-foot siphon was necessary in crossing a deep gulley. The level section across the bottom of the gulley was about 110 feet long. A reinforced concrete siphon, fourteen feet in diameter, with walls sixteen inches thick, was built at a cost of about $85,000. The excavation amounted to 6,000 cubic yards, and the backfill 2,800 cubic yards. Sixteen hundred and eighty cubic yards of concrete and 200,000 pounds of steel were used.

An interesting phase of the work was the use to which a dragline excavator was put. This machine was a Bucyrus Class-14 gasoline-driven, caterpillar-mounted dragline, equipped with a 74-foot boom and two-yard bucket. After completing the excavation, the machine, operating as a crane, handled the steel reinforcing and forms for the siphon. After the concrete was poured, and the forms removed, the machine, again using its dragline bucket, did the necessary backfilling.

For the actual construction of the siphon two 40-ton Russell bins were used (one on each end), and the concrete sent to the job in chutes of Archer concrete spouting from Rex concrete mixers. On the level section the concrete was poured by chuting it to a hopper, and then handling it in carts on a platform constructed over the steel work to short chutes which put it in place. The concrete for the sides was placed with chutes direct from mixers to forms. Two Domestic single diaphram pumps were used to keep the excavation free of water.

On this job, W. Reeves was chief engineer and W. J. Montgomery, master mechanic.

We are indebted to Mr. H. H. Hoddle of the Herbert N. Steinbarger Company of Denver for this information.

Revenues of Canada's Roads

Canada's revenue from foreign tourist travel last year is estimated around $136,000,000.

Since a very large proportion of the tourists came by way of motor cars, the roads of the country were the mediums by which a considerable share of that $136,000,000 was earned.

The fact that tourists want to see Canada, and are willing to spend money to do so, is one that should be capitalized. Therefore, roads should be built just as quickly as money can be made available for them, as the returns are too large to be allowed to lapse.

Although in the past five years the sum of $191,566,000 has been spent on highways in Canada, there are still 257,947 miles of roads in that country which are not improved.

J. B. Harkin, commissioner of National Parks of Canada, says that in the final analysis tourist traffic is really the life-blood of good roads, and the arteries through which flows the flood of gold to the general advantage of Canada.

A business letter — like a woman's dress — should be long enough to cover all the principal parts, but short enough to be interesting. — *Milestones.*

The Excavating Engineer

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The Business Situation

Taking industry as a whole the volume of business at present is of most unusual proportions. Although the first two months of this year showed a falling tendency, as indicated particularly by the sharp decline of the stock market, the drop was not general, and the recent increase in business activities indicates that the slack period was only the regular seasonal change. Bank debits outside of New York City, which are often considered the best single measure of the country's trade, are running larger than ever before at this season. Railroad shipments of manufactured products are also higher than previous records. Factory employment is at a high level.

One particularly favorable aspect of the present situation is that, in spite of the unusual large volume of total business, and in spite of the very great speculation that has been made in securities and in real estate in some sections, commodities have not been in sympathy with this speculation but have rather maintained a steady and more healthy level. As a whole, commodity prices have shown a moderate downward tendency, and since no possibility of shortage has been apparent speculation has not been invited. If anything, industry is somewhat over-expanded, and under these circumstances it is equal to any demand likely to be made upon it. Railroads are in good shape for prompt delivery, and labor is being well rewarded because of the general increase in its production.

Building construction, which has been so large a factor of the business volume for the past few years, continues to be projected in extraordinarily high volume. According to the F. W. Dodge Corporation, contracts awarded in thirty-seven states during January amounted to $457,158,600, which although about 15% less than December is nearly 50% more than in January last year. It has been estimated that in addition to the work already contracted there is contemplated work which will amount to $851,590,300, which is only 6% under the record recorded last December and is 26% over the total reported for January 1925.

The credit situation is easy as a general thing, and while it is probable that somewhat firmer tendencies will develop there will certainly be no stringency or scarcity of money. There has been no appreciable change in the commercial paper rate which has varied from 4¼ to 4½%, although call money rates which dropped to 3% during the January low period have risen to around 5%.

The general tendency of money rates has been upward since the summer of 1924, and with business still in large volume the time does not appear to be at hand for any alteration of this trend.

Imports which have been steadily rising since last June totaled last January $414,000,000 or $67,900,000 more than the January of the previous year. Exports totaled $399,000,000 or $47,400,000 below January a year ago, the figures revealing a debit balance for foreign trade merchandise of $15,000,000. The Department of Commerce has made the following table which shows that during the year 1925 our imports have more nearly approached the amount of exports.

Imports from —	1924	1925
Europe	$1,096,087,463	$1,237,831,843
North America	995,155,751	981,449,307
South America	466,073,844	518,991,017
Asia	930,708,486	1,319,771,147
Oceania	48,944,804	77,807,810
Africa	72,992,231	92,143,967
Total	$3,609,962,579	$4,227,995,091

Exports to —	1924	1925
Europe	$2,445,300,134	$2,602,486,592
North America	1,090,041,346	1,140,346,807
South America	314,251,551	402,603,132
Asia	514,591,534	485,426,980
Oceania	156,504,866	189,489,206
Africa	70,294,414	89,043,626
Total	$4,590,983,845	$4,909,396,342

Although this, of course, does not take into consideration the amount of money invested abroad, it is probable that our position as a creditor nation may bring us to the point where imports exceed exports.

The different branches of industry appear to be in better adjustment than they have for years and the outlook justifies optimism. Although in some sections there are indications that building operations and speculation in real estate have been overdone, we do not believe this holds true for the entire country, and the immediate future is promising.

All reports from Canada indicate that that country shares our anticipation of good business ahead.

· FIELD NOTES ·

Make Trucks Good Ads

By Philip L. Sniffin

The most valuable opportunity offered to the excavating engineer in cashing in on the advertising value of his truck equipment is that of distinctive and attractive lettering upon the vehicle. On the one hand some concerns prefer to use novelty effects with colors that "clash" in order to attract attention. Some even go so far as to create a "freak" combination of colors which will create a distinctive originality. On the other hand, some truck owners favor extreme conservatism in the use of simple, dignified and characteristic lettering which serves alone to build a character and prestige for the company.

As in all other advertising, in order to create interest, the subject must first get attention. Therefore, it is extremely advisable in painting the truck, to get away from the commonplace, either in one direction or another. It is usually not enough to merely say that "we will put the firm name, address and telephone number on the body along with a few words to describe our service," and leave the arrangement and color scheme up to the painter. Careful thought should be given to the phrasing and arrangement in each case, in order to provide the most desirable advertising appeal, and in order to best reflect the character of the business. Once having found a good arrangement, it should be used for all trucks in the excavating engineer's service.

There is much to be said in favor of the adoption of a distinctive "trade mark" or slogan, or both, and the prominent display of this upon the truck. By the association of ideas, expressed either in an appropriate illustrative trade mark or a few well-chosen words, it has been found that most effective "selling talk" can be put across in the public mind.

The excavating engineer's name, address and phone number deserves a prominent place upon the body design. Many concerns have expressed the opinion that they obtain a substantial amount of business by giving good display to the firm name, so that it will be easily recalled or easily recognized.

Good painting and lettering is always justifiable, and this fact is borne out by the experience of those who have always insisted upon it. A cheap job will invariably look cheap and will reflect an unfavorable impression.

Experience has shown that a definite system should be established for keeping up the vehicle's appearance. By careful attention to the following four points, the excavating engineer will not only keep his trucks in attractive appearance, but he will be assured of obtaining the greatest possible economy in doing this.

a. Insistence upon good painting and lettering in the first place.

b. Frequent, complete washing and polishing.

c. Revarnishing just as soon as the original paint shows the slightest signs of losing its original attractiveness.

d. Complete repainting at intervals of from 15,000 to 25,000 miles, according to severity of service and method of care. The old paint should be entirely removed and the vehicle repainted entirely. This not only gives a better appearance than "painting over," but it will endure a much longer period of service.

Clinkers

It has been found that the presence of limestone in a fire of certain grades of coal which have a high sulphur content will prevent the troublesome effect of clinkers, although it will not affect clinkers that have already formed.

After cleaning the fire and laying a part of the grate bar, sprinkle broken limestone on the bars, pull the fire over on this, and sprinkle the other half of the grate in the same way.

After the fire has been burning for about half an hour, broken limestone may be sprinkled on top of the coal.

If the limestone has been properly applied there will be a spongy mass of hot clinkers over the whole fire, but this mass of clinkers will have enough holes in it to allow the air to get through to the coal.

When the clinker gets thick, break it up and pull through fire door.

Firing Don'ts

Don't allow holes to burn in the fire bed.

Don't allow ashes to accumulate under the grate. It chokes the draft and burns the grate bars. Have a regular time for cleaning.

Don't forget to regulate the dampers and doors to produce an even rate of combustion. If automatic dampers are used they should be inspected frequently.

Don't forget to anticipate shutting down by throwing open the fire doors, partly closing the draft doors, opening the dampers, and spreading a little coal over the fire to prevent a sudden rise in steam pressure.

Then clean and bank the fires.

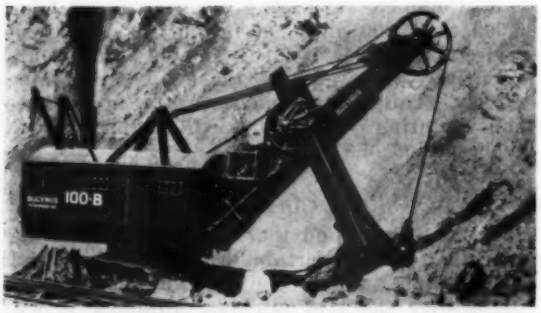
Don't neglect to pump up your boiler to the upper gauge line when stopping for the night. Start the pump before closing the throttle.

DEVICES YOU OUGHT TO KNOW ABOUT

Bucyrus Company Announces New 3-Yard Revolving Shovel

A 3-yard revolving shovel for general use was announced by the Bucyrus Company of South Milwaukee on March 15th.

This shovel is built particularly for the contractor and the general user of excavating machinery.



Bucyrus 100-B Steam Shovel

It represents a new departure in shovels in that it is built along lines never before used in shovels for general utility.

In design it follows the basic plan developed by the Bucyrus Company in building the 120-B, a 4-yard mine and quarry full-revolving shovel announced last year.

In principle it is a machine that offers to the contractor and engineer engaged in excavation

Bucyrus 100-B Electric Shovel

a machine that combines the advantages of a small revolving shovel with those offered by the railroad-type shovel, but has a working range considerably greater than either.

In brief the machine has the speed of action, big dipper capacity, ruggedness and power of the railroad-type shovel, with the mobility, the full-revolving swing and the maneuvering ability of the small revolving shovel.

The shovel is remarkably close coupled, the boom length being only 29 feet 6 inches and the rear end radius 16 feet.

Throughout the clearances have been held within close units, so that the shovel is capable of working in close quarters and is suitable for any sort of digging.

A New One-Man Patrol Grader

The Stockland Road Machinery Company, Minneapolis, Minnesota, has recently placed on the market a new one-man patrol grader with detachable power unit for general road maintenance purposes.

The new grader is pulled, not pushed. The grader detaches from the tractor, saving the purposes of an extra power unit if the buyer already

Stockland One-Man Patrol Grader

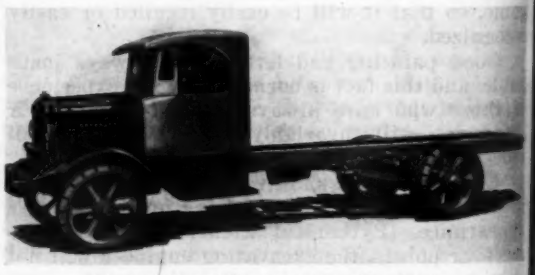
has a tractor. Power from the tractor, controlled from the operator's seat, raises and lowers either end of the blade and raises and lowers the scarifier. The operator has every control right at hand.

The grader can be drawn by any road tractor from a rating of eight horsepower to twelve-twenty tractors.

"GMC Big Brute" Five-Ton Truck

The "GMC Big Brute" five-ton truck is the latest development by the *General Motors Truck Company, Pontiac, Michigan.* Many new and important features will be found on this new model.

Among the mechanical improvements are in-



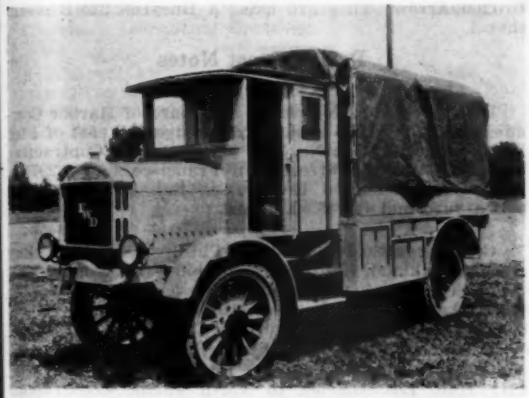
The New GMC "Big Brute" Five-Ton Truck

cluded a new metal used in the removable cylinder walls, which it is said gives greater hardness and wearing quality; double honing completes the mirror-like finish of the walls; lapped piston pins and a new metal alloy for the valves.

A cab built by Fisher Body Corporation of indestructible steel is also a part of the truck's standard equipment.

Public Service Utility Truck

A new public service utility truck, which consists of a tarpaulin-covered body with many compartments for carrying tools and supplies, earth-boring auger and derrick for setting poles mounted on four-wheel-drive truck, is the latest development of the *Four-Wheel Drive Auto Company of Clintonville, Wisconsin,* which company also manufactures the F. W. D. earth-boring, pole-setting equipment, a machine built for heavy line construction work.

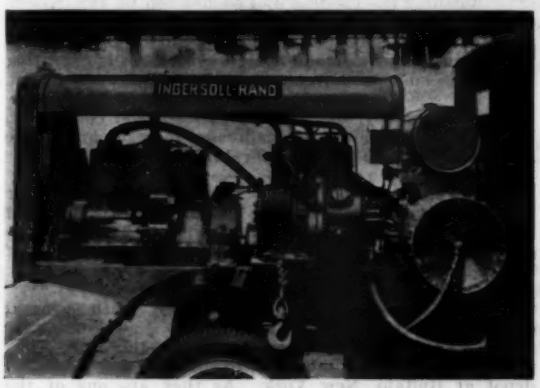


The New Four-Wheel-Drive Public Service Utility Truck

The new outfit, which is being built for the Western Electric Company, the American Telephone and Telegraph Company, and for telephone and public service companies, is a complete utility truck; the four-wheel drive of the truck is a better assurance against getting stalled on the poor roads often encountered by service companies.

A New Air Motor Hoist

The Ingersoll-Rand Company, 11 Broadway, New York, has recently added to their line of air motor hoists a new product known as the DU "Utility" Hoist. This hoist is designed for use with portable air compressors, and has several unique features and applications of its own.



Size DU Utility Hoist Mounted on 5½-inch x 5-inch Portable Compressor on Ford Truck

The hoist is a light, compact hoist of the winch type, and is provided with mountings by which it may be attached to the rear end of portable compressors, to the side of large compressors, or to compressors mounted on Ford trucks. Further information may be had upon addressing the manufacturer.

International Language

Don't try to read this out loud! Just read over the first part to yourself and see if you can understand it. It is the report of the meeting of the Western Society of Engineers at which Eugene F. McPike lectures on Ido as a proposed international language. The report given in the journal of that society is as follows:

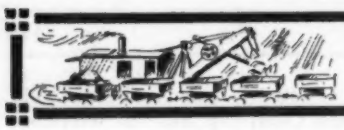
Vespere, 19-a Oktobro, 1925, koram la Westala Societo di Injeniori, Chicago, Eugene F. Mc-Pike, diskuris en Ido ed Angla, pri la problemo di linguo internaciona por mondo-komunikado. Il montris tridekatri lumprojekturi en Ido ed explikis kelka detali di la linguo. Pro la rapida developo di radio, ni probable havos komuna linguo ante multa yari. Tala linguo devas esar konstruktita ciencale. On ne povus adoptar, por internaciona relati, ula naturala linguo, exemple Angla o Françа, nam to donus tro grand avantajo a la populo di qua ol esas la matrala linguo. Ni devos havar neutra linguo, quale, Ido, qua esas regulara, preciza, klara, fonetikala ed eufona.

TRANSLATION

On the evening of the 19th of October, 1925, before the Western Society of Engineers, Chicago, Eugene F. McPike discoursed in Ido and English, concerning the problem of an international language for world-communication. He showed thirty-three stereopticon slides in Ido and explained some details of the language. On account of the rapid development of radio, we probably will have a common language before many years. Such a language ought to be constructed scientifically. One would not be able to adopt any natural language, for example, English or French, for that would give too great an advantage to the people of whom it was (is) the mother-tongue. We ought to have a neutral language, such as Ido, which is regular, precise, clear, phonetic and euphonious.

Do You Know?

China has the world's largest coal area and it is practically untouched.



SHOTS FROM THE · FIRING LINE ·

Illinois Notes

Wilson and Company, together with Geo. D. Whitcomb Company, have taken on the excavation for the Starved Rock Lock and Dam from the Woods Brothers Construction Company and will maintain a job office at 106 College Building, Ottawa, Illinois.

New York State News

BY T. A. BURNS

I. M. Luddington Company of Rochester, New York, are working on the western end of their subway job after finishing the grading and excavation on the eastern end. Mr. C. J. Ewart of 447 Brooks Avenue is superintendent on the job, and reports it will be done within the specified time. Mr. E. G. Jobes Goodwin is operating their railroad-type shovel.

D. B. Hennessy, the well-known Rochester contractor, has purchased a new gas compressor to take care of the many contracts he now has for 1926.

James Ryan of Albion, New York, was with the writer in New York City last month, looking over the different type shovels used on the new subway jobs and on the swamp land of Long Island. Mr. Ryan is a member of the well-known firm of M. A. Ryan Co.

The Walsh Construction Company, with general offices at 403 Herald Building, Syracuse, New York, were successful on several contracts let by the New York Central Railroad Co. One will be the new terminal depot at Buffalo, New York. As they are one of the largest contracting firms in that line, they use considerable steam shovel equipment, including seven Bucyrus 70-Ton, 2½ to 3-cubic-yard steam shovels and two Bucyrus 50-B 1¾-cubic-yard Diesel oil shovels. Mr. Jos. Small is superintendent of this firm and Mr. Smith looks after all detail work.

L. Maxie & Son of Oneonta, New York, have been successful bidders on a letting in Pennsylvania last month. They are about finished on their last contract.

The Callanon Road Improvement Company of 109 State Street, Albany, New York, are starting on what they expect to be the biggest year in the history of the company. They have purchased considerable new equipment, including a set of self-propelling caterpillars for one of their Bucyrus 70-Ton shovels. They also will use an extra 3-cubic-yard dipper on this shovel.

The writer was with Mr. Graham of Graham & Stevans Co., 443 Broadway, Albany, New York. Mr. Graham advises he has several road jobs in the Adirondack mountain region, one being several miles up at Fourth Lake. He expects to be kept quite busy this year.

Mr. W. C. Morre of Green Island is still on the job with H. P. Beebe Co. of Utica operating their shovel at Rome. They have worked continually throughout the winter, although the snow at times was 8 feet high, but as Mr. Morre said, "what is a few snow drifts with a steam shovel handy."

Clarence Rose of Binghamton, New York, has just returned after a visit through the West where he took in the Chicago Road Show.

Mr. W. Kennedy, who has just completed his work at Bellefontaine, Ohio, is pulling the levers on a Bucyrus 70-C for the Walsh Construction Company.

Oklahoma Notes

BY A. M. SHEFFER

A large number of state highway bids were opened and contracts let at Oklahoma City last month. It is understood some of these jobs include quite a bit of rock and earth excavation.

March 2nd to 5th inclusive were very busy days for Wichita, Kansas. Both the Southwest Road Show and Farm Power Equipment exhibited then. The Forum, a wonderful exhibition hall and a credit to the city, was used for the road show, and most of the farm implements took space on streets and vacant lots.

The Broken Arrow Coal Company, one of the officers being Mr. W. G. Parrotte, formerly with the Bucyrus Company, have just started stripping at their mine at Broken Arrow. They are using a Bucyrus 225-B steam shovel.

Pacific Coast Notes

BY J. H. SACKETT

Bids received as follows by the Board of Harbor Commissioners for 80,000 cubic yards dredger fill east of Fish Harbor, Specification No. 719: F. C. Franks Contracting Co., 260 California Street, San Francisco (A) $.2975 a yard; San Francisco Bridge Co., San Francisco (A) $.34 a yard and (C) $.46 a yard.

Contract awarded to John Phillips, 637 Sant Ray Avenue, Oakland, California, who bid $.5 per cubic yard for the construction of 10 miles of levee for the Colorado River Land Co., Calexico, California, work involving 306,000 cubic yards earthwork.

Contract awarded by the Board of Public Works, City Hall, Los Angeles, to North Pacific Construction Co., 723 Detwiler Building, Los Angeles, who bid $1,034,881 for the improvement of Pico Boulevard from Crenshaw Boulevard to Exposition Boulevard.

Plans are being made by Engineering Department, Santa Fe Railway, R. B. Ball, Chief Engineer, Kerckhoff Building, Los Angeles, for the following works in Arizona: $2,000,000 for rail changes; $2,000,000 for water development on the main line, including pumps and wells, construction of two concrete dams, one west of Ash Fork and one between Ash Fork and Williams, also bridge construction and renewals on main; $480,000 for double tracking on Ash Fork-Phoenix line, and additional loading and icing facilities between Phoenix and Glendale; $250,000 for new yard and shop construction at Phoenix; $250,000 for additional water development; $150,000 for yard improvements at Prescott, Arizona; $200,000 for new passing tracks; $80,000 for ballasting work where needed. Above projects involving expenditure of about $5,500,000.

Contract awarded to Will F. Peck, Hollywood Security Building, Los Angeles, who bid $764,764 for the construction of Section No. 2 of the Arroyo de la Sacatella storm drain system, Los Angeles.

A contract has been awarded to the Foundation Company of New York for the construction of a new railroad from Saltillo to Tuxpan which will cost approximately $20,000,000, according to Julian F. Lozano, president and organizer of the Saltillo to Tuxpan railroad. The new road will be over 600 miles long and the construction will be financed by American capital.

Contract to W. E. Callahan Construction Co., 830 California Building, Los Angeles, who bid $.14 a yard for 500,000 cubic yards canal excavation in 1½ miles near Blythe, Riverside County, for Water & Power Commission, Los Angeles.

Bonds in the amount of $500,000 were voted by the Mohawk Valley Irrigation District, Mrs. A. B. Ming, Secretary, Yuma, Arizona, for irrigation system.

Contract awarded to W. A. Bechtel, 625 Market Street, San Francisco, who bid $17,805 for the construction of Section No. 1 of the Bowman Lake Mountain Road, 6050 feet in length. Bids received from: (1) W. A. Bechtel, $17,805; (2) United Concrete Pipe & Construction Co., Merced, $20,874.

	(1)	(2)
6,050 cubic yards excavation	$ 2.20	$ 2.65
6,400 square yards road surfacing	.26	.40
Timber for bridges	95.75	80.00

Above work is for the Nevada Irrigation District, Fred H. Tibbetts, Alaska Commercial Building, San Francisco, Consulting Engineer.

Contract awarded to Bent Bros., 418 South Pecan Street, Los Angeles, and Martinez, Contra Costa County, for the construction of a 3,000,000-barrel oil reservoir near Tracy, San Joaquin County, for the Southern Pacific Railroad Co. Reservoir is to be concrete lined, approximately 1100 feet long, 600 feet wide, 30 feet deep, and involves the following approximate quantities: 160,100 cubic yards excavation, 7,400 cubic yards concrete, 300,000 pounds reinforcing steel (including some wire mesh), 2,000,000 board feet timber and roofing, 6,160 squares of roofing.

Contract awarded to The Utah Construction Co., Phelan Building, San Francisco, for concrete work on all the tunnels of the Southern Pacific rail projects from Eugene to Klamath Falls, Oregon, at an approximate price of $500,000, this work to be done on the Natron Cut-off project.

Southern States Notes

BY W. W. WHORLEY

Schelly J. Lanoux, former operator on United States B-3, please write to James McColloster, 1234 Forstall Street, New Orleans, Louisiana.

Ernest Israel is craning a Marion 60 shovel at the city furnace of the Sloss-Sheffield Steel & Iron Company. J. M. Armstrong is operating this machine.

We regret to announce the death of Fred Blankenship. Mr. Blankenship served with the 21st Division in the World War, and was gassed. He never recovered from the effects of the gas, and at the time of his death was in the United States Veterans' Hospital at Algiers, Louisiana. Burial services were held at his original home at Sylacauga, Alabama.

J. D. Blankenship advises us that he is loading ore with a Marion 90 for the Ray Consolidated Copper Company at Santa Rita, New Mexico.

Claude Green is loading slag with a Bucyrus 65-C at Holt, Alabama. J. L. Ford is firing.

H. B. Rose writes us that he is building a fill with a Bucyrus 30-B for the Consolidated Construction Company at St. Paul, South Carolina.

Abundant Low Cost Power for Road Building!

IF you want power — a wealth of low cost power — power that is easily controlled — power that is 90 per cent efficient — power that spells profits in road building — then you want Cletrac Power! Dependable power under all conditions — in winter's sub-zero weather and in summer's torrid heat. That's what Cletrac Tractors mean to you.

CLETRAC
Crawler Tractors

The powerful Cletrac "K" is the only tractor made with the instantaneous oiling system. A push of a plunger and the "Snap" Lubricator thoroughly oils the lower track wheels without stopping the machine. Cletrac "K" pulls practically its own weight, *delivering 90% power efficiency.* And no other tractor made can equal that performance.

Sure-footed traction — a short turning radius — abundant power — remarkable economy — these are the outstanding features that make Cletracs prime favorites with road builders.

Let us show you the proof. Let us tell you all the details of this better tractor. Write us today for our folder, "Cletrac K for All Road Work."

The Cleveland Tractor Co.
Cleveland, Ohio

E. E. Minor, who is stripping a quarry at Leeds, Alabama, with a Bucyrus Class-14 dragline, was a recent caller at this office.

J. T. Moses is operating a Bucyrus 20-B at Coalmont, Tennessee.

E. P. Russell, superintendent of the Tennessee State Highway Department, reports that he is in some heavy work on Cumberland Mountain near Monteagle, Tennessee. George Ridge is piloting a Bucyrus 20-B through heavy rock cuts on this work.

W. O. Austin is loading shale with a Bucyrus 20-B for the Columbia Clay Company, South Carolina.

I. S. McDougal is loading brown ore with a Bucyrus 30-B for the Republic Iron & Steel Company at Woodstock, Alabama.

St. Louis Items

BY A. B. KOENIG

The Industrial Track Construction Co. has contract for taking up 22 miles of the St. Louis, El Reno and Western Railroad between El Reno and Guthrie, Oklahoma.

The Gannon Construction Co. were awarded contract by the Santa Fe Railroad for a 32-mile cut-off between Pawhuska and Fairfax, Oklahoma.

Chas. Gould finished his Wabash Railroad work at Montpelier, Ohio, and is moving his outfit back to Kansas City, Missouri.

Pete Shugart and Tom Blythe were in looking over the mule market. They expect to get started on their Canada work as soon as weather permits.

C. C. Barnes is going to ship three machine outfits on to Shugart & Blythe's work in Canada.

M. Edward McGuire came in from Ohio to look over some of the new highway work in Missouri. Ed says he will finish his work on the Big Four shortly and wants another grading job suitable for a machine outfit. His home address is 4012 College Avenue, Indianapolis, Indiana.

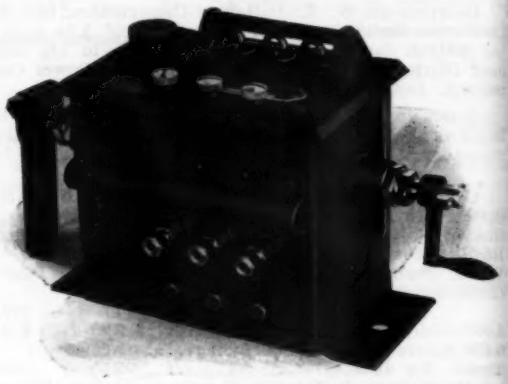
Harry M. Malin, P. O. Box 105, Grandview, Indiana, has a land and floating dredge idle and wants a dredging job.

Jos. E. Nelson & Sons were awarded contract by the Illinois Central Railroad Co. for the boiler erecting and machine shop which will house 25 tracks and three large erecting cranes, and for the paint and tank shop at Paducah, Kentucky. This company were also awarded contract for the concrete sidewalks and pavements adjacent to the two buildings.

Cook & O'Brien were awarded contract for laying the flow line pipe from Springfork Dam to the settling basin at the pumping station in Sedalia, Missouri. Their bid was $200,000. Work is to be completed June 15th.

The Gruenenfelder Construction Co. of Highland, Illinois, has been awarded the contract to erect a new community high school building at Dupo, Illinois, on its bid of $97,000. Construction work will begin early in the spring.

The Cotton Belt Railroad will begin shortly the cutting down of the long grade south of Jonesboro, Arkansas. The improvement will cost approximately $300,000.



Madison-Kipp Lubricators come in Blind and Sight Feed Types. Blind Feed up to four feeds. Sight Feed—any number of feeds.

NO valves — exposed parts—or packing

Force-feed lubrication can be done without ball and check valves — without exposed parts that gather dirt and trouble — without plunger or piston packing that will have to be renewed from time to time.

Madison-Kipp Lubricators have no valves. They work on the Kipp valveless principle.

They are self-contained. All working parts are enclosed and operate in oil.

Their plungers require no packing whatever.

We have prepared a bulletin which describes the inside mechanism of Madison-Kipp Lubricators which we will send to anyone requesting it.

May we mail one to you? Ask for Bulletin No. 50.

Madison-Kipp Corporation

Madison, Wisconsin, U.S.A.

For convenience in making inquiry use postal inserted in this number.

These features give

GMC Big Brute

ECONOMY

No Truck has ever had before

Two-Range Transmission: Provides a power transmitting unit which assures **economical operation under any and all conditions.**

Removable Cylinders: Each cylinder is a *separate removable sleeve,* and can therefore be accurately machined to even thickness on both sides. Expansion and contraction are therefore equal in all parts. Also this feature insures a continuous close-running fit of the pistons.

It is a matter of only a **few hours to remove and replace a cylinder,** and it is unnecessary to remove or rebore the entire cylinder block—an operation extremely costly in service charges and time lost by the truck.

Removable Valve Lifter Assembly: Permits removing the valve lifters and rollers by taking out four cap screws. With assembly removed access to the crank case is possible without removing the oil pan.

Air Cleaner: Filters the air to carburetor and engine preventing harmful dirt and grit from reaching the engine's working surfaces.

Pressure Lubrication to all bearing points provides a constant, unfailing film of oil over all working parts.

Cooling System is a combination pump and thermo-syphon type. The circulation of water by pump is first along the valve seats, the hottest points, then into the head, over combustion chambers, around spark plug bosses and back through the radiator. The circulation through the cylinder jackets is by thermo-syphon system This combination system results in very **even cooling, without over cooling the engine.**

Products of
Yellow Truck and Coach Manufacturing Company
subsidiary of General Motors
GMC Big Brute, 3½ and 5 ton trucks - GMC 1, 1½ and 2½ ton trucks
Yellow Cabs - Yellow Coaches Yellow Light Delivery Trucks
Hertz Drivurself Cars - GMC 5 to 15 ton Tractors

A General Motors Product

Sold and Serviced Everywhere by Branches, Distributors and Dealers of

GENERAL MOTORS TRUCK COMPANY, PONTIAC, MICHIGAN

A DIVISION OF YELLOW TRUCK AND COACH MANUFACTURING COMPANY

Mention The Excavating Engineer when answering this advertisement.

J. W. Soderstrum is back from Florida and is now with the List Construction Co. at Washington, Missouri, on their Missouri Pacific Railroad work.

Tom Joyce of Cameron, Joyce & Co. is in Hot Springs and expects to return in a couple of weeks.

Hal, Riley of Clapp, Riley & Hall, Chicago, stopped off here for a couple of days en route to Hot Springs. While here he disposed of a carload of mules at the stock yards in East St. Louis.

C. D. Herrin, Rural Route No. 1, Chillicothe, Missouri, completed his work there and wants a grading job suitable for a fresno outfit.

Allhands & Davis were awarded 12 miles of bank widening by the Frisco Railroad south of Osceola, Arkansas.

The McCormack-Combs Construction Co., with a bid of $715,903, are low for the new filter plant to be constructed for the St. Louis Water Works at Howards Bend on the Missouri River.

Murch Bros. Construction Co. of St. Louis were awarded contract for the general construction work on the Veterans Hospital at Fort Snelling, Minnesota. Their bid was $1,277,725.

J. H. Ellison, vice-president of the Winston-Dear Co. of Minneapolis, and president of the Associated General Contractors of America, was the guest of the local chapter of the organization at the City Club here February 23rd.

T. E. Newell reports nine teams and a fresno outfit idle at Carrier Mills, Illinois, and he wants any kind of grading.

Reed & Lowe are double tracking 80 miles of Florida-East Coast Railroad. H. E. Lowe of this firm was here trying to locate a good piledriver and concrete foreman for this job. They have moved their headquarters to Melbourne, Florida.

C. E. Jennings was awarded a small grading contract by the Frisco Railroad at Neodesha, Kansas.

Hoeffken Bros., Belleville, Illinois, started on their highway work near Jackson, Tennessee.

Contractors when in want of work or labor for their outfits, write, wire or phone Koenig Labor Agency, 612 Walnut Street, St. Louis, Missouri, or 501 Delaware Street, Kansas City, Missouri.

PROPOSALS FOR LEVEE WORK — Office of the Secretary, Mississippi River Commission, 1311 International Life Building, St. Louis, Missouri — Sealed proposals will be received here until 11 a. m., April 6, 1926, for constructing about 180,000 cubic yards of earthwork by hydraulic method in Iowa River-Flint Creek Levee District No. 16, Iowa. Further information on application.

Twin City News

BY J. C. YETTER

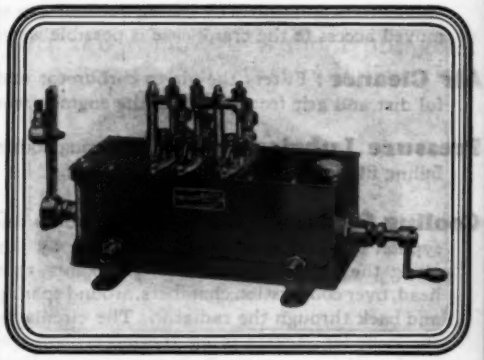
S. J. Groves & Sons, Minneapolis, have started excavating for the United States Veterans Bureau Hospital at Fort Snelling, Minnesota. A Bucyrus 20-B steam shovel is doing the work. Sam Sorben is pulling the levers.

A McCord Force Feed Lubricator Will Keep Your Shovel on the Job

A McCord force feed lubricator installed on your steam shovel now will insure more continuous operation. Dependable force feed lubrication prevents shutdowns and delays, it gives more hours on the job.

McCord force feed lubricators are used as standard equipment by the largest and best-known steam shovel builders and they will be installed on any shovel at your request.

Put a McCord lubricator on now and be assured of dependable lubrication for the life of your shovel.



McCord Class B. A. Force Feed Lubricator

McCord Radiator & Mfg. Co.
Detroit, Michigan

McCord
force feed
Lubricators

USE A WHITCOMB—MAKE A RECORD

"Whitcombs" automatically speed up the job—they are faster. Having more horse-power per ton of weight, means faster starting and faster hauling. They are easy to operate (no licensed engineer required.) They require no fuel when idle. Their design prevents derailing of cars even on unlevel, temporary tracks.

Prompt service at material source and at delivery point means no idle men or equipment.

Put a "Whitcomb" on your work and profit by the increased work per man. "Whitcombs" set the pace for all other operations.

Bulletins completely detail all sizes and types—2½ to 25 tons—where shall we send them?

GEO. D. WHITCOMB COMPANY
ROCHELLE, ILLINOIS
Offices in principal cities

GASOLINE – STORAGE BATTERY – ELECTRIC
WHITCOMB
LOCOMOTIVES

T. J. Frederick is spending a few weeks at West Baden, Indiana.

Barnand & Curtis have recently been awarded some drainage work in Mahaska County, Iowa.

Foley Bros., St. Paul, have placed another 30-B Bucyrus Diesel dragline on their railroad work in Florida.

Martin Stores, who is in charge of the repair shops for S. J. Groves & Sons, Minneapolis, has been busy the last three months overhauling equipment. He is ably assisted by Tom Mathens.

R. P. England, Mundo, South Dakota, has a contract with the Springfield Brick and Tile Company, Springfield, Minnesota, for stripping their clay deposit.

Canada

Toronto and Vicinity

BY C. F. ENGLAND

The Ontario Department of Public Highways have commenced their season's program. The first call for tenders closed February 22, 1926 and the second call March 22, 1926. There is grading, concrete, macadam, as well as some bridge structures.

The Dominion Sewer Pipe and Clay Industries, Ltd., are making an addition to their plant at Swansea. This looks encouraging, as they are evidently looking forward to good times.

The Atlas Construction Company are making good progress on their work on the New Welland Ship Canal.

A. G. Creelman & Co. are getting ready to start their work on Section 8, New Welland Ship Canal. They have some 300,000 yards of concrete to put in.

TRADE NOTES

The Hesey-Wolf Machine Company of Cincinnati, Ohio, has recently issued a 48-page catalog illustrating and describing their portable electric tools for all purposes. A copy of the catalog Number 32 may be had upon addressing the manufacturer.

The Western Wheeled Scraper Company, Aurora, Illinois, has recently issued a bulletin Number 26-E illustrating and describing their new product, the Western Tumblebug. A copy of the bulletin may be had upon applying to the manufacturer.

The Hayward Company, 50 Church Street, New York, New York, has just issued a bulletin Number 665 entitled "Hayward Skid Excavators and Dredges." The bulletin is attractively illustrated, describes the usages of Hayward buckets in dredging, canal digging and ditch work. Also a little pamphlet Number 625 has been issued, describing every bucket manufactured by the Hayward Company. Copies of these issues may be obtained upon application to the manufacturer.

The Davenport Locomotive Works, Davenport, Iowa, announce the recent publication of a circular carrying a description and full specifications of their new 4-ton gasoline locomotive. The Davenport Locomotive Works will be glad to fill any requests for this circular, addressed to them.

10-TON CRANE
BUILT BY
OHIO LOCOMOTIVE CRANE CO.
Bucyrus, Ohio

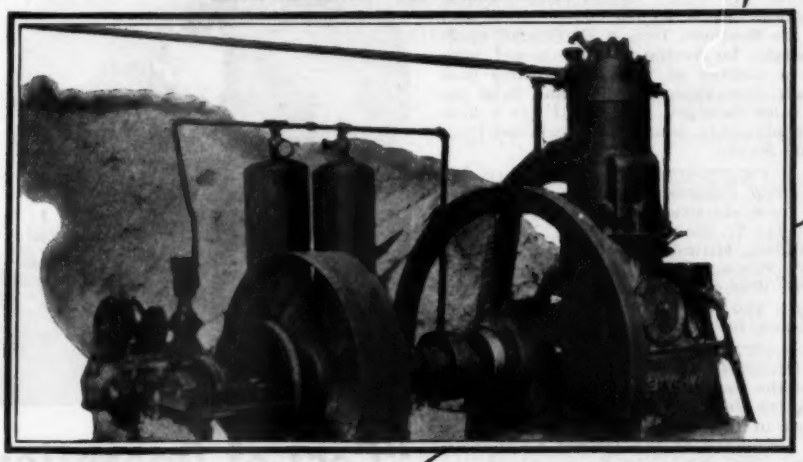
Nationally recognized as builders of the HIGHEST QUALITY PRODUCT.

Would they consider using anything but the best quality of boiler?

JOHNSTON BROS., Inc.
Specializing in Boilers for Contractors' Equipment
FERRYSBURG, MICHIGAN

For convenience in making inquiry use postal inserted in this number.

From Ontario



A small F-M Diesel engine, 50 horsepower, used on road building jobs in Ontario by the Dufferin Construction Company.

to

Florida

On the dredge "Broward," owned by the Hollywood Land & Water Co., Florida, a 300-horsepower F-M Diesel drives a 16-inch dredge pump. A 75-horsepower F-M Diesel is direct connected to an F-M alternator.

A FAR cry from road building in Ontario to dredging in Florida. Yet the Fairbanks-Morse Diesel engine has proved equal to both extremes — and to the vast range of duty that lies between.

For isolated construction operations where absolute dependability is of foremost importance, this two-stroke-cycle engine — built more simply than a slide-valve steam engine — has given service free from expensive shutdowns.

Even at the front door of the coal mines, this engine has brought the unequaled Diesel economies to many types of excavating and construction work.

FAIRBANKS, MORSE & CO., Chicago

28 branches throughout the United States at your service.

FAIRBANKS-MORSE

DIESEL ENGINES · MOTORS · PUMPS

1899

For convenience in making inquiry use postal inserted in this number.

R. A. Garner succeeds A. J. Merrill, deceased, as secretary and treasurer of the Southern Iron & Equipment Company. Mr. Garner has been connected with this company since 1910 and of wide experience in various departments of the organization.

H. M. Pratt has been elected second vice-president and sales manager of the Southern Iron & Equipment Company, Atlanta, Georgia, he having been connected with this Company for a number of years, some time past as manager of their New Orleans Office, and more recently as general sales manager. Mr. Pratt has a host of friends in the contracting, lumber and railroad business throughout the South.

Climax Engineering Company, Clinton, Iowa, have appointed several new dealers for the sale of their Climax Engines: H. Y. Smith Company, 1301 First National Bank Building, Milwaukee, Wisconsin, for Milwaukee and Eastern Wisconsin; A. K. Miller Engineering Company, 112 North Water Street, Mobile, Alabama, for Southern Alabama; and L. H. Staley, 515 Whitney Building, New Orleans, for Louisiana.

The Chicago Pneumatic Tool Company announces their acquisition of the George Oldham & Sons Company of Baltimore, effective February 16th the current year.

The manufacture of the Oldham products which are continued will be conducted at the Detroit plant, 6201 Second Boulevard. The sales will be combined and handled from the Chicago Pneumatic Tool Company's branches now operating in the principal cities as well as through their domestic and foreign agency connections. The Oldham products requiring repairs should be sent to branch located nearest the customer or forwarded to Detroit.

The Diamond Power Specialty Corporation, manufacturer of Diamond Soot Blowers, announces the appointment of Mr. J. E. Heeter as manager of the Philadelphia office. Mr. Heeter succeeds Mr. M. J. Miller, who has been transferred to the Detroit territory. Mr. Heeter has been associated with Mr. Miller in the Philadelphia district for many years, and is well versed in soot blower engineering and soot blower service work.

REVIEW OF BOOKS and CATALOGS — We shall be glad to review, in this column, such books and catalogs as are sent to us.

DUFF-GOVERNOR CONTROLLED SELF-LOWERING JACKS — Bulletins have recently been published describing and illustrating this product. Copies of these bulletins may be obtained upon writing *The Duff Manufacturing Company, Pittsburgh, Pennsylvania.*

DETROIT MULTIPLE RETORT UNDERFEED STOKERS are described in a new twenty-four-page bulletin just issued by the *Detroit Stoker Company, No. 103 General Motors Building, Detroit, Michigan.* Illustrations bring out many special features, such as the LEVEL FUEL BED, and the method for controlling movement of the fuel throughout the entire process of combustion. The applications shown cover a wide range of operating conditions, and include installations with preheated air, the burning of wood refuse with coal at high ratings, use of the stokers for burning Indiana and Illinois coal, etc. The bulletin is known as No. 103. Copies may be had by writing the manufacturer.

"Cost of Operation and Upkeep Far Below That of Others"

"Our Buckeye has given us such splendid service that it would not be possible for us to make a kick", write Ernest Lorenz & Son, Roseville, Michigan.

"It is a better machine mechanically, less complicated, and the cost of operation and upkeep is far below that of other machines we have had."

After operating this Buckeye nearly two years, these owners give us these facts based on actual experience.

Would *you* be so enthusiastic about *your* trench excavator?

Why not find out *why* so many Buckeye owners are Buckeye boosters? There's a reason — just ask any Buckeye *user,* or send for the Buckeye booklets.

The Buckeye Traction Ditcher Company
Findlay, Ohio

Manufacturers of Trench Excavators (both Wheel and Chain-and-Bucket Types), Pipe Line Trench Excavators, Tile and Open Ditchers, Back-Fillers, Pipe Screwing Machines, Curb Diggers and Clay Diggers.

THERE'S A BUCKEYE SALES AND SERVICE OFFICE NEAR YOU

BUILDERS OF TRENCH EXCAVATORS FOR OVER 30 YEARS

A SMALL BUT PROFITABLE INVESTMENT

TO anyone whose business it is to know how to excavate rock effectively and economically, one article in the April Explosives Engineer may be worth many times One Dollar—the price of a Three Years' Subscription.

This eight-page illustrated feature, written by A.V.Trimble, Construction Engineer with the Hydro-electric Power Commission of Ontario, describes in detail the methods employed in the construction of the thirteen-mile Queenston-Chippewa Canal and forebay.

Another article tells how a submerged concrete pump box which had been stopping the flow of a drainage ditch was quickly removed by dynamite. You will also be interested in the complete explanation of a recently invented process of "Mining for Oil" which utilizes shafts and tunnels for the commercial extraction of unrecovered oil from "exhausted" oil fields.

In addition to several other important papers there is the monthly Explosives Engineer's Index which gives a bibliography of everything published in the technical press of the world relating to drilling and blasting.

All you have to do is to mail the coupon below with your name and those of any others in your organization whom you wish to receive the magazine regularly. If you prefer to have us bill you later, or to see a free sample copy before subscribing, indicate your wishes on the coupon.

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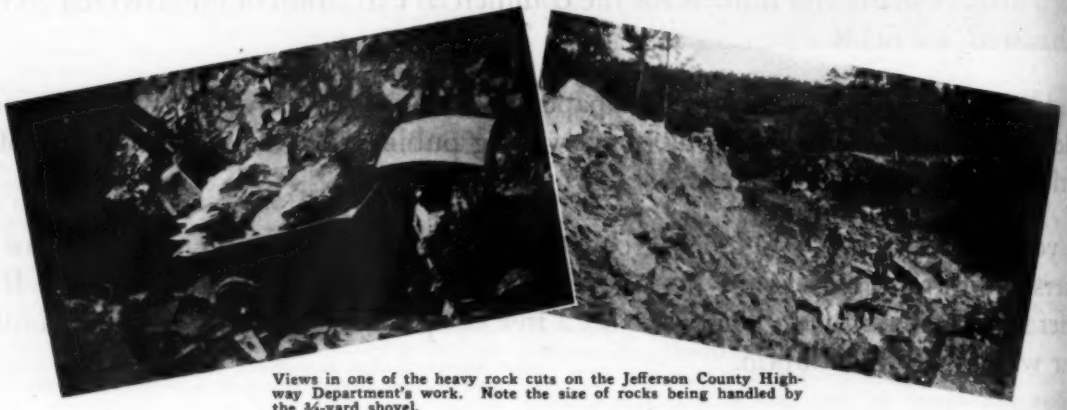
The material in the foreground gives a good idea of the character of the rock blasted and loaded out on parts of the Federal Aid Project No. 149



Views in one of the heavy rock cuts on the Jefferson County Highway Department's work. Note the size of rocks being handled by the ¾-yard shovel.

The approach to the bridge across Turkey Creek. The 15,000 cubic yards of material for this fill was borrowed from a nearby hill.